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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/785,104 | 02/16/2001 | Joseph Fjelstad | TESSERA 3.0-188 DIV | 7265 |

530 7590 11/20/2002

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EXAMINER

QUINTO, KEVIN V

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,104

Applicant(s)

FJELSTAD, JOSEPH

Examiner

Kevin Quinto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-12, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-12, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10, 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the rejection of claims 10 and 11 under 35 USC § 103 in view of Dozier, II et al. (USPN 5,772,451) and Khandros et al. (USPN 5,148,266) have been fully considered but they are not persuasive. The applicant states that the flexible leads (231, 232, 233, 234, 235, 236) in figure 2C of Dozier are wire bond interconnection or wire core elements. The examiner believes that this statement does not prove that the applicant's invention is patentable over the Dozier and Khandros references. The leads (231, 232, 233, 234, 235, 236) in figure 2C of Dozier are resilient or flexible; Dozier states this in the Detailed Description of the Invention as well as in the abstract. The applicant states that there is no incentive to modify the leads of Dozier in the manner disclosed by Khandros. However Dozier states that resilient or flexible leads are desirable and useful for applications where the leads must conform to non-planarities of devices to which they are being interconnected (column 5, lines 55-60 and column 17, lines 2-17).
2. Applicant's arguments with respect to the rejection of claims 12, 14, and 15 under 35 USC § 112 have been considered. The examiner believes that the arguments overcome the rejection of claims 12, 14, and 15 under 35 USC § 112.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 10-12, 14, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kirloskar et al. (USPN 6,221,749 B1).

5. In reference to claim 10, Kirloskar et al. (USPN 6,221,749 B1, hereinafter referred to as the “Kirloskar” reference) discloses a similar device. Figures 4 and 12d illustrate a microelectronic element with a body (10) defining a front surface. There are flexible leads (30) which have pad ends (not labeled) and tip ends (40a). The pads (12) are exposed at the front surface. For all of the embodiments (including the ones shown in figure 4 and 12d) disclosed by Kirloskar, the leads (30) are flexible (column 9, lines 55-57) and are understood to be independently movable with respect to the body. The leads (30) are spaced apart from the front surface of the body (10). The tip ends (40a) project over the front surface of the body (10). Figure 4 shows that the leads (30) are curved in a plane parallel to the front surface of the body (10). Kirloskar makes it clear that the body (10) can be a wafer with a plurality of semiconductor chips (claims 1-5).

6. In reference to claim 11, Kirloskar discloses a similar device. Figures 4 and 16b illustrate a wafer probe card with a body (70) defining a front surface. There are flexible leads (30) which have pad ends (not labeled) and tip ends (40a). The pads (not labeled) are exposed at the front

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surface. For all of the embodiments (including the ones shown in figure 4 and 16b) disclosed by Kirloskar, the leads (30) are flexible (column 9, lines 55-57) and are understood to be independently movable with respect to the body. The leads (30) are spaced apart from the front surface of the body (10). The tip ends (40a) project over the front surface of the body (10).

Figure 4 shows that the leads (30) are curved in a plane parallel to the front surface of the body (10).

7. In reference to claim 12, Kirloskar discloses a similar device. Figures 4 and 12d illustrates a microelectronic element with a body (10) defining a front surface. The gold leads (30) are flexible (column 9, lines 55-57). The flexible leads (30) have pad ends (not labeled) and tip ends (40a). The pads (12) are exposed at the front surface. For all of the embodiments (including the ones shown in figure 4 and 12d) disclosed by Kirloskar, it is understood that the leads are flexible (column 9, lines 55-57) and are understood to be independently movable with respect to the body. The leads (30) are spaced apart from the front surface of the body (10). Both of the leads (30) of figures 4 and 12d have two substantially flat main surfaces. Both of the leads (30) have a first main surface which faces the body and a second main surface which faces away from the body. The tip ends (40a) project over the front surface of the body (1). The highest top surface of the lead has been interpreted to be the first portion or tip end. Each lead (30) has a first portion or tip end which is separated from the front surface at a first distance. Each lead (30) also has a second portion or pad end which is separated from the front surface at a second distance. The top surface of the lead in contact with the pad has been interpreted to be the second portion or pad end. Thus the first distance is greater than the second distance.

8. In reference to claim 14, Kirloskar discloses that the body (10) is an IC chip. In addition, figure 12d of Kirloskar shows that the chip (10) has a central region and a peripheral region where the pads (12) are in a peripheral region of the chip (10). It is understood that there are plurality of leads (30). At least some of the leads (30) extend inwardly over the central region of the chip (10).

9. In reference to claim 15, Kirloskar makes it clear that the body (10) can be a wafer with a plurality of semiconductor chips (claims 1-5).

10. Claims 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (USPN 4,893,172).

11. In reference to claim 12, Matsumoto et al. (USPN 4,893,172, hereinafter referred to as the "Matsumoto" reference) discloses a similar device. Figures 1a and 1b illustrate a microelectronic element with a body (3) defining a front surface. The leads (1) are springs and are understood to be independently movable with respect to the body. The leads (1) have pad ends (not labeled) and tip ends (not labeled). The pads (32) are exposed at the front surface. The leads (1) are spaced apart from the front surface of the body (3). Both of the leads (1) of figures 1a and 1b have two substantially flat main surfaces. Both of the leads (1) have a first main surface which faces the body and a second main surface which faces away from the body. The tip ends project over the front surface of the body (3). The highest top surface of the lead (1) has been interpreted to be the first portion or tip end. Each lead (1) has a first portion or tip end which is separated from the front surface at a first distance. Each lead (1) also has a second portion or pad end which is separated from the front surface at a second distance. The top

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surface of the lead in contact with the pad has been interpreted to be the second portion or pad end. Thus the first distance is greater than the second distance.

12. In reference to claim 14, Matsumoto discloses that the body (3) is an IC chip. In addition, figure 1b of Matsumoto shows that the chip (3) has a central region and a peripheral region where the pads (32) are in a peripheral region of the chip (3). It is understood that there are plurality of leads (1). At least some of the leads (1) extend inwardly over the central region of the chip (3).

13.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dozier, II et al. (USPN 5,772,451) in view of Khandros et al. (USPN 5,148,266).

16. In reference to claim 10, Dozier discloses a similar device. Figure 2C illustrates a microelectronic element with a body (240) defining a front surface. There are flexible leads (231, 232, 233, 234, 235, 236) which have pad ends (231a, 232a, 233a, 234a, 235a, 236a) and tip ends (231b, 232b, 233b, 234b, 235b, 236b). The pads (not labeled) are exposed at the front surface. The leads are flexible or elastic (column 5, lines 55-60) and are understood to be independently movable with respect to the body. The leads (231, 232, 233, 234, 235, 236) are

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spaced apart from the front surface of the body (240). The tip ends (231b, 232b, 233b, 234b, 235b, 236b) project over the front surface of the body (240). Dozier does not explicitly state that the leads can be curved in a plane parallel to the front surface of the body (240). However it is well known in the art to curve leads in such a manner. Khandros et al. (USPN 5,148,266, hereinafter referred to as the "Khandros" reference) discloses that leads which are "curved in directions parallel to the face" of the body have "increased flexibility." Dozier discloses that flexible or elastic leads are desirable and useful for applications where the leads must conform to non-planarities of devices to which they are being interconnected (column 5, lines 55-60 and column 17, lines 2-17). It would therefore be obvious to curve the leads in a plane parallel to the front surface of the body (240) in the device of Dozier. Figure 2C does not illustrate that the body is a wafer with a plurality of semiconductor chips. However Dozier discloses that the body can be a semiconductor wafer (column 16, lines 28-36). It is understood that the wafer includes a plurality of semiconductor chips.

17. In reference to claim 11, Dozier discloses a similar device. Figure 2C illustrates a microelectronic element with a body (240) defining a front surface. There are flexible leads (231, 232, 233, 234, 235, 236) which have pad ends (231a, 232a, 233a, 234a, 235a, 236a) and tip ends (231b, 232b, 233b, 234b, 235b, 236b). The pads (not labeled) are exposed at the front surface. The leads are flexible or elastic (column 5, lines 55-60) and are understood to be independently movable with respect to the body. The leads (231, 232, 233, 234, 235, 236) are spaced apart from the front surface of the body (240). The tip ends (231b, 232b, 233b, 234b, 235b, 236b) project over the front surface of the body (240). Dozier does not explicitly state that the leads can be curved in a plane parallel to the front surface of the body (240). However it is

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well known in the art to curve leads in such a manner. Khandros et al. (USPN 5,148,266, hereinafter referred to as the "Khandros" reference) discloses that leads which are "curved in directions parallel to the face" of the body have "increased flexibility." Dozier discloses that flexible or elastic leads are desirable and useful for applications where the leads must conform to non-planarities of devices to which they are being interconnected (column 5, lines 55-60 and column 17, lines 2-17). It would therefore be obvious to curve the leads in a plane parallel to the front surface of the body (240) in the device of Dozier. Dozier discloses that the body (240) is an electronic component such as a probe card insert (column 18, lines 1-30).

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (703) 306-5688. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

KVQ

November 18, 2002

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

